

Comments to Parliament

ELECTRICITY REGULATION AMENDMENT BILL (B23-2023)

Hügo KRÜGER



07-December 2023

My Background - Civil Engineering (nuclear)

- Bachelors in Civil Engineering from the University of Pretoria
- Masters in Civil Nuclear Engineering from École Spéciale des Travaux Publics, du bâtiment et de l'industrie (ESTP Paris)

Work experience

- Cement/Fly Ash Industry in SA (Lafarge SA) [coal]
- Hinkley Point [Nuclear Fission]
- ITER, Tokamak Assembly Preparation Building [Nuclear Fusion]
- Oil and Gas Industry in construction of offshore wind and LNG infrastructure
- Sideline: Youtube Podcast, Substack, writer, and columnist for independent online titled **Member of Truth in Energy (TIE), a loose affiliation of stakeholders within the energy sector (economists, engineers, workers etc)**
- I have no conflict of interests or dogmatic views in favour or against unbundling



World Wide Utility Ownership

Map of the status of electricity market liberalisation



- It is just not true that “unbundled” utilities is the best practice
- Neither is it true that vertically integrated utilities is the best practice

For every good example of privatisation (such as Texas) I can think of notable bad examples (such as Zimbabwe) and it is equally true of good examples of vertically integrated utilities (such as South Korea, Vietnam etc)

Mixed Systems: Canada, various US states

South Africa is a “bespoked” system

110 countries have moved towards some sort of unbundling

But 90 countries have not.

The world is almost divided on this issue!

Reason: **humans have inherent skepticism to privatising**

Why does a country unbundle?

2. OBJECTS OF THE BILL

The main purpose of the Bill is to effect amendments to the Act in order to improve the administration of the Act; to provide for additional electricity, new generation capacity and electricity infrastructure; to provide for the establishment, duties, powers and functions of the Transmission System Operator SOC Ltd; to provide for an open market platform that will allow for competitive electricity trading; and to assign the duties, powers and functions of the Transmission System Operator SOC Ltd to the National Transmission Company South Africa SOC Ltd.

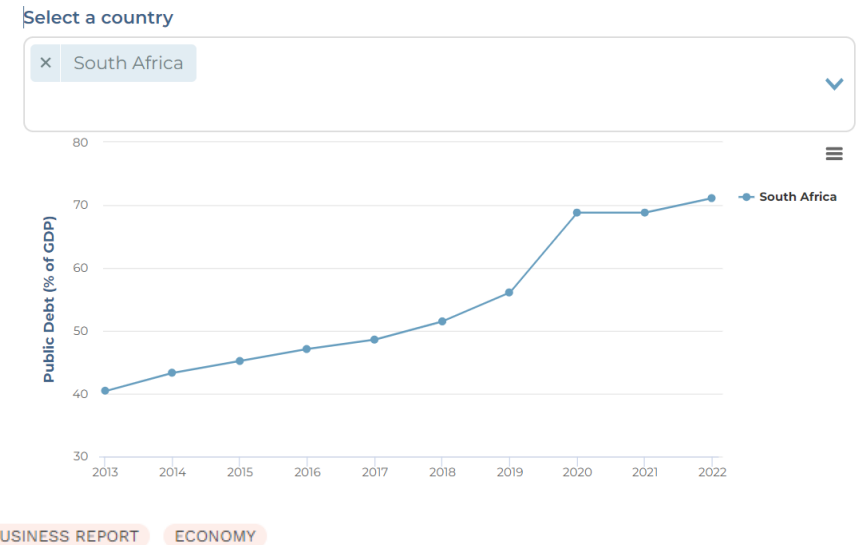
The intention is to accept private sector participation in electricity generation,

But

The consequence will be to **accept bankruptcies as normal**, IPPs, Eskom Generation will all potentially go bankrupt if they fail to compete

The move from a Vertically Integrated Utility to a competitive market

South Africa Public Debt Chart



SA must hike borrowing or go over fiscal cliff by March 2024, warns Godongwana

Promising the Impossible?

ESKOM UNBUNDLING WON'T CAUSE JOB LOSSES, PRIVATISATION, SAYS ANC

The ANC assured the public that the process of restructuring of the power utility would not result in privatisation, job losses or an increase in the price of electricity.



If bankruptcies are normal, then job losses have to occur.

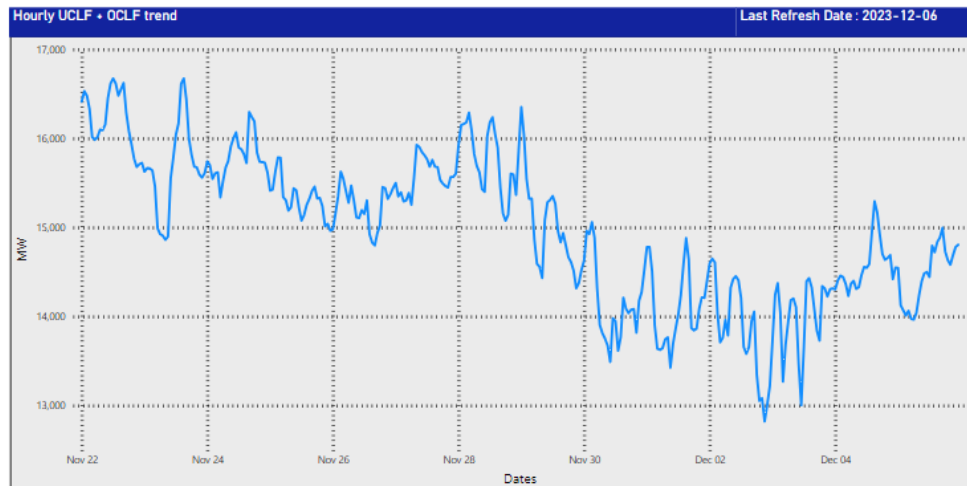
The government and political parties in support of the bill, they have to be straight with the voters!

Risks What will happen to Eskom?

Hourly UCLF + OCLF trend

This is an hourly trend of the actual unplanned outages (including other outages) for the past 14 days.

Download data file 



Microsoft Power BI

16GW of Units at Eskom (Generation) is on unplanned Capacity Loss Factor (UCLF)

SA has 50GW installed Capacity
 $16\text{GW}/50\text{GW} = 33\%$ are broken down

Imagine a company where 1/3 of all the assets are broken down.

How will this not result in bankruptcies?
Fixing these units can end loadshedding.

Risks: What will happen to South Africa?



Anatoly Chubais holds a press-conference in Moscow, June 1996.
(Andres Hernandez / Getty Images)


After seven years of economic “reform” financed by billions of dollars in U.S. and other Western aid, subsidized loans and rescheduled debt, the majority of Russian people find themselves worse off economically. The privatization drive that was supposed to reap the fruits of the free market instead helped to create a system of tycoon capitalism run for the benefit of a corrupt political oligarchy that has appropriated hundreds of millions of dollars of Western aid and plundered Russia’s wealth.

The architect of privatization was former First Deputy Prime Minister Anatoly Chubais, a darling of the U.S. and Western financial establishments. Chubais’s drastic and corrupt stewardship made him extremely unpopular. According to *The New York Times*, he “may be the most despised man in Russia.”





Russia’s? Oligarchy,
decline in life
expectance, women
forced into prostitution

NEWS

From unbundling back to re-bundling: Zesa undergoes massive restructuring



Published 2 years ago on 3 Sep 2021
By **NewsHawks**



POWER utility Zesa Holdings Limited, reeling from a huge debt, unpaid bills and corruption, has embarked on a massive restructuring exercise to re-bundle its subsidiaries into one entity and recruiting experts, including former employees, in a move that has unsettled some senior managers who stand to lose their jobs and perks.

JONATHAN MBIRIYAMVEKA

Zimbabwe

Last year [2020], Zesa was owed US\$30 million by debtors in foreign currency and ZW\$3.2 billion in local currency by debtors who include government and local authorities, but those figures have since gone up.

“Zesa has now moved to boost its core team by luring back skilled former employees as consultants.”

Risks: What will happen to South Africa?

hnr.org/report/2023/03/09/cut-life-itself/lebanons-failure-right-electricity

HUMAN RIGHTS WATCH



Recommendations



Downloads

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To the Council of Ministers

- Urgently implement Law 462/2002, which organizes the electricity sector, establishes the Electricity Regulatory Authority, and unbundles electricity activities, and pass any implementation decrees necessary to fulfill the law;
- Urgently pass a decree appointing the members of the Electricity Regulatory Authority (ERA) in a transparent and merit-based selection process, and ensure that the ERA can carry out its work in an independent and autonomous way;
- Immediately increase generation capacity from hydropower, wind, and solar. The faster the transition to renewables, the more money Lebanon will save, the more jobs created, and the more lives saved from air pollution reductions. The World Bank has repeatedly stated its intention to fund the transition from fossil fuels to renewable energy, and Ministers should demand funds for this purpose from the Bank and other sources.
- Until the ERA is appointed and can organize and oversee public procurement practices, ensure that any new contracts signed related to the energy sector comply with the 2021 Public Procurement Law and international best practices, and that signed contracts are made publicly available;
- Establish an independent complaints mechanism that would allow bidders in the procurement processes to challenge decisions during the bidding process until contract award;

“That's the standard technique of privatization: defund, make sure things don't work, people get angry, you hand it over to the private sector” - **Noam Chomsky**

Libanon? The libanese mafia is the biggest competitor to Électricité du Liban (EDL)

What are the guarantees that it won't occur in SA?

NEWS ENVIRONMENT

Billionaire Patrice Motsepe pushes ahead with major renewable energy project



SA already has an IPP Oligarchy?

The Eskom roots of the Construction Mafia

20th July 2023 by Chris Steyn



The roots of South Africa's Construction Mafia reach all the way back to the extensive site disruptions around payment issues at the Medupi and Kusile projects for Eskom. This emerges from an interview with Construction lawyer Euan Massey who says regulations released in 2017 opened up a door for illicit organisations to use what had happened previously in terms of site disruption to demand payment from contractors and from developers and subcontractors in the construction industry on the premise that it was a government requirement that they be paid 30% of the contract value. Their modus operandi involves extortion, violence, and even murder. Meanwhile, details about the alleged involvement of government officials and crooked cops in the Construction Mafia emerged at a webinar this week with the Minister of Public Works and Infrastructure Sihle Zikalala and industry

SA already has a Mafia at Eskom?

Literature on Unbundling

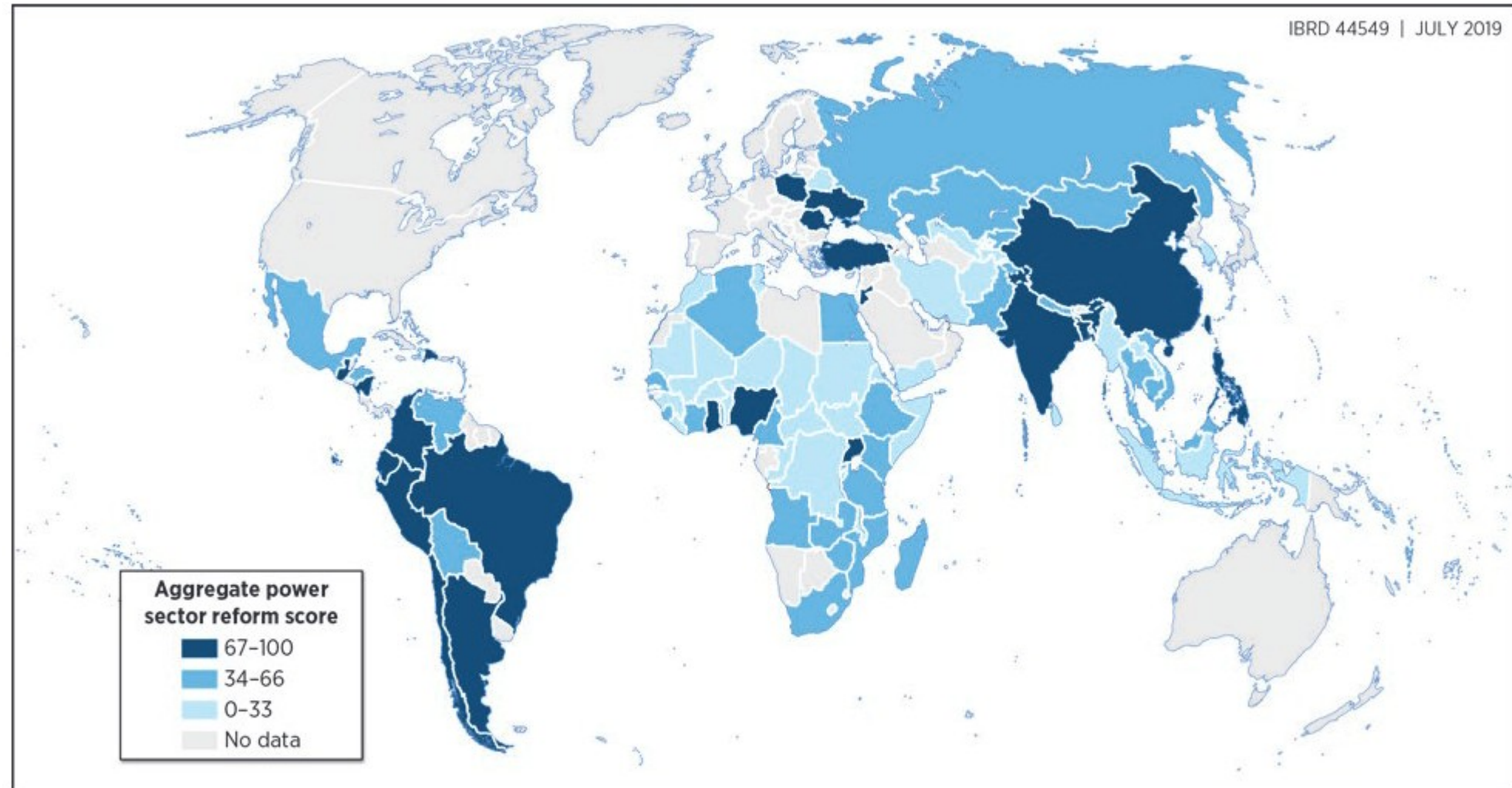
“The prescriptions of the 1990s reform model were primarily derived from economic theory and principles. By the early 2000s, it had become clear that the model was **not universally** applicable in practice (Besant-Jones 2006).”

South Africa’s decisions should be based in empirical reality,

That world as it is, not the world that we want to see.



MAP O.1 Power sector reform spread unevenly across the developing world

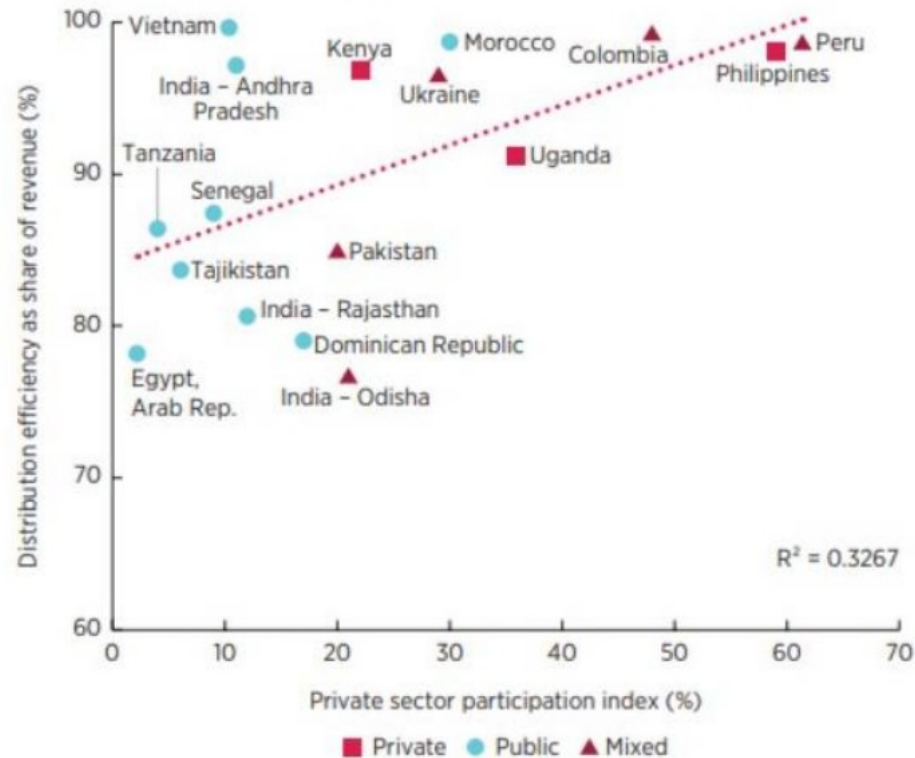


Sources: World Bank elaboration based on Rethinking Power Sector Reform utility database 2015; Regulatory Indicators for Sustainable Energy 2016.

Note: PSRI score based on existing legislation (as of 2015), which may be different from practice.

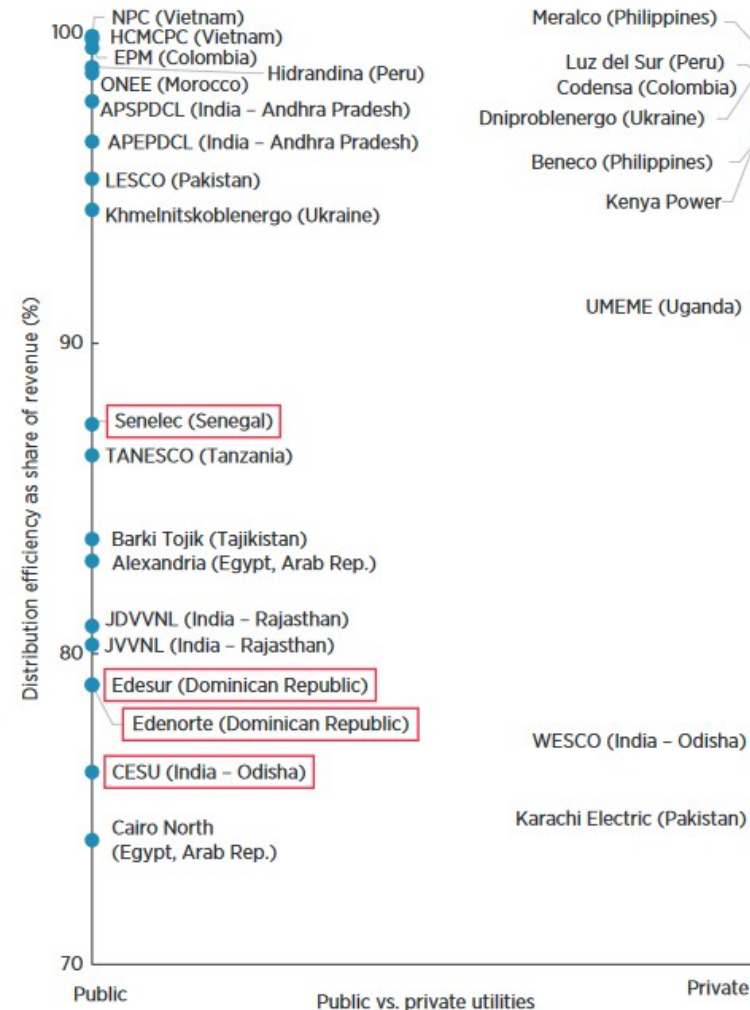
Stats from the World Bank

FIGURE 9.10 A substantial minority of publicly owned utilities performs as efficiently as private ones



There is no difference between public and private utilities in terms of performance, no indication that unbundling increases

FIGURE 9.11 Among the least efficient utilities are those that experienced privatization reversals

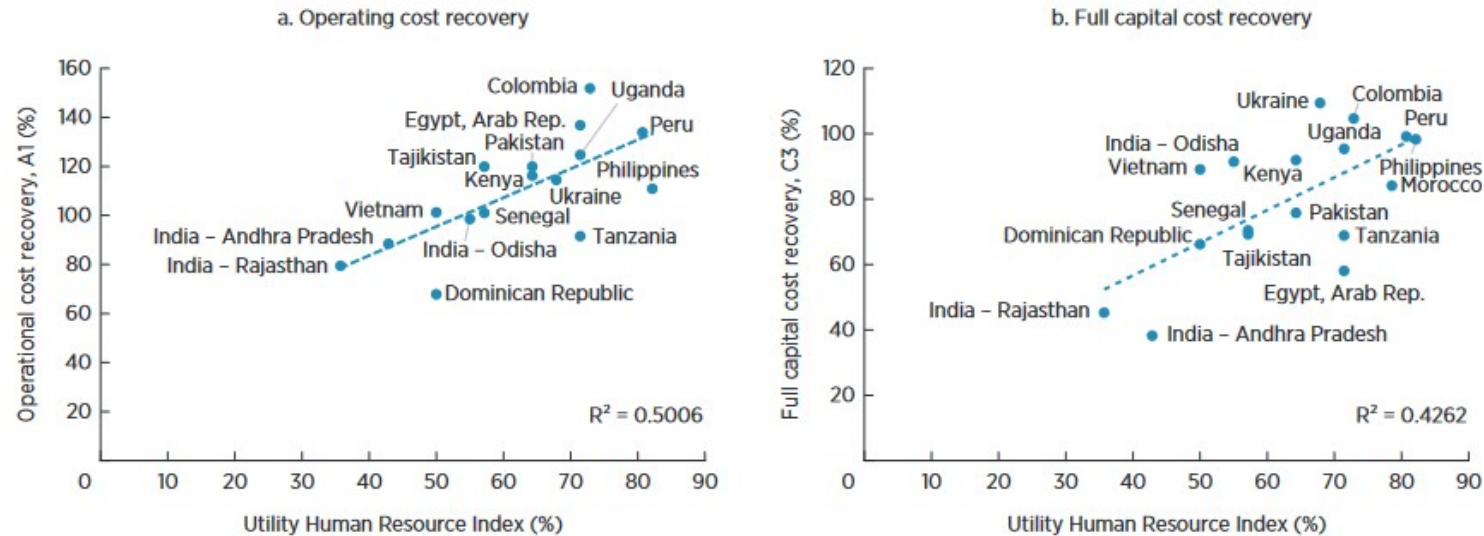


Warning: Among the least efficient utilities are those that experienced privatisation reversals

Senegal, Dominican Republic, Odisha in India

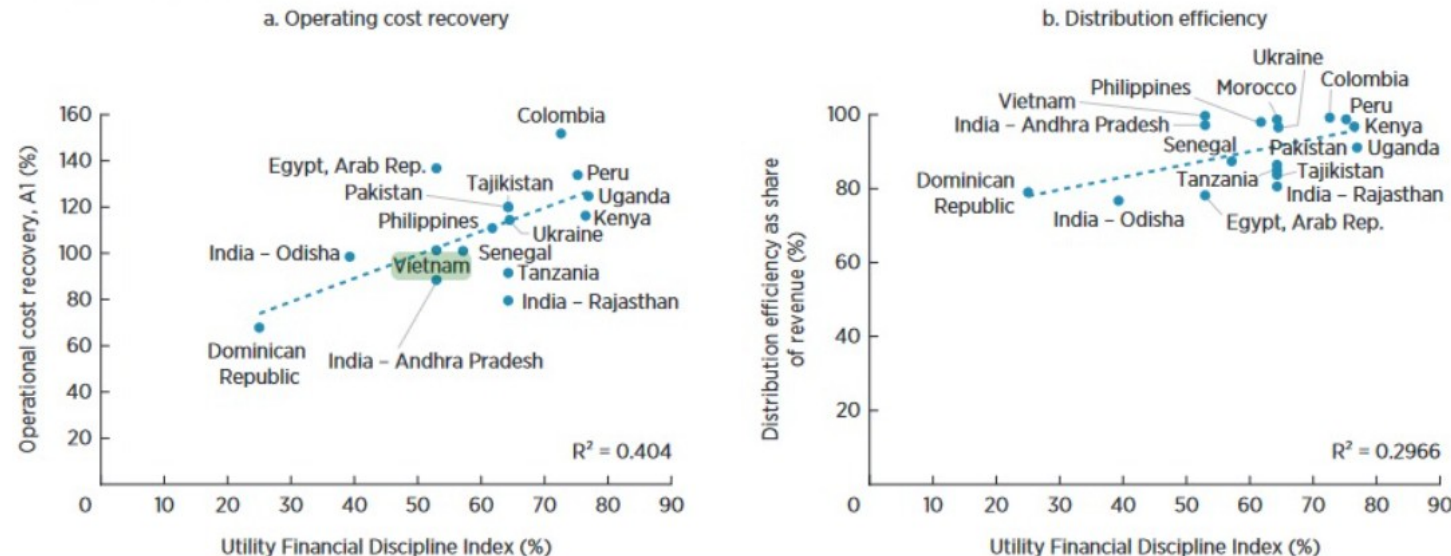
Warning: If you take SA on this path, there is no going back
The old Eskom will be dead

FIGURE 9.4 Utilities with better human resource management show better performance on operating cost recovery and full capital cost recovery



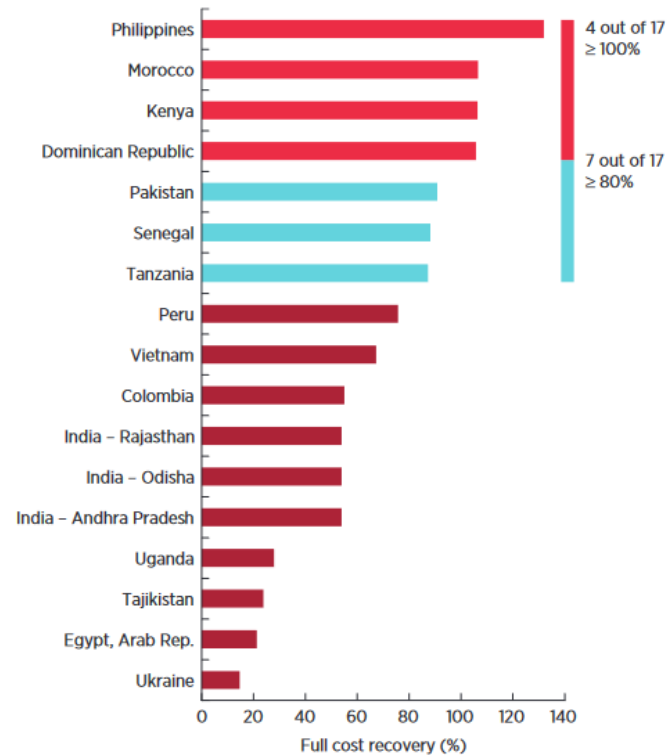
- Success depends on financial discipline (no corruption)
- Success depends on employing competent people (the best engineers)

FIGURE 9.2 Utilities with stronger financial discipline show better performance on operating cost recovery and distribution efficiency



Stats from the World Bank

FIGURE 8.12 Only a handful of countries and states had achieved full cost recovery prior to reform

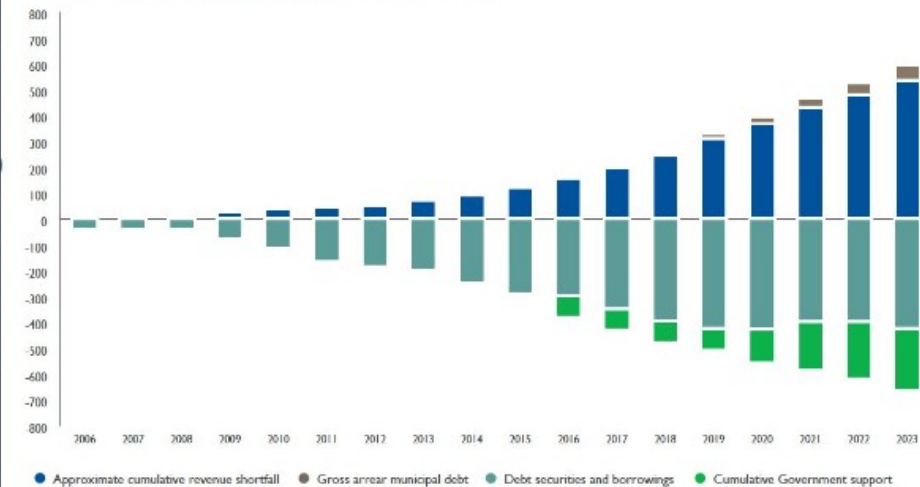


In addition to corruption, state capture, etc Eskom is where it is today, because of a lack of cost recovery tariffs (SA is not unique)

We were awarded a standard tariff increase of 9.61% for the 2023 financial year. To achieve cost reflectivity, the average tariff would have had to increase by approximately 20%.

The lack of cost-reflective tariffs and resultant revenue shortfall has been an ongoing challenge since 2006 and is one of the main reasons for our financial constraints, requiring increased reliance on debt to fund the shortfall. This, together with our new build programme, has led to our debt securities and borrowings balance escalating to R424 billion by 2023.

Growth in cumulative revenue shortfall and debt, R billion



Note: Government support in 2016 includes the conversion of a R60 billion shareholder loan and direct equity of R23 billion. Debt securities and borrowings and Government support are reflected as negative amounts for illustrative purposes.

A rising tariff/price is inevitable in the short term

(regardless of the act)

A high tariff indicates shortages, government cannot suppress prices for too long [root cause of loadshedding along with licencing laws]

TABLE 9.11 Overview of cross-sectional performance on final outcomes as of 2015 with countries ranked by extent of power sector reforms from most reformed (Philippines) to least reformed (Tajikistan)

Key Findings

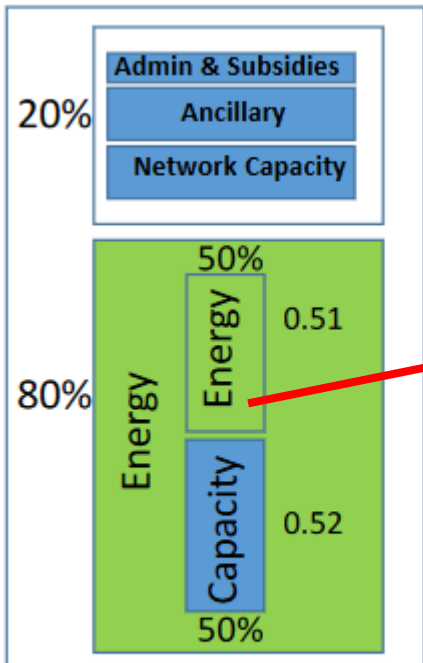
Finding #7: Although many countries made some progress toward security of supply with the 1990s reform model, **few were able to achieve that goal completely, despite harnessing substantial private investment**

2015	Reliability (SAIFI)	Security of supply			Social inclusion		Environmental sustainability	
		Normalized capacity (MW/million population)	Capacity diversification (Fuel Concentration index)	Capacity growth (Capacity growth/peak dd growth)	Electrification (% population)	Affordability (% of GNI)	Carbon intensity (gCO ₂ /kWh)	Modern RE share in TFEC (%)
→ Philippines	4	209	0.26	1.05	87	7.35	549	6.8
→ Peru	10	391	0.44	1.14	91	—	271	12.24
Ukraine	10	1,260	0.38	—	100	3.71	446	1.15
→ Uganda	42	23	—	1.22	16	—	—	1.09
→ Colombia	11	345	0.57	2.34	97	7.32	161	13.21
→ Dominican Republic	105	354	0.36	1.04	98	10.01	573	3.46
India		248	0.52	1.89	79	3.09	794	2.28
→ Pakistan	37	121	0.31	0.35	71	4.18	417	3.05
Kenya	13	49	0.35	1.47	31	4.32	229	2.89
Vietnam	14	433	0.35	1.43	99	10.84	399	7.14
Senegal	31	64	0.75	1.19	58	13.45	627	0.79
Egypt, Arab Rep.	0	415	0.62	1.83	100	0.49	446	2.37
Morocco	3	231	0.32	0.9	95	4.59	701	2.15
Tanzania	47	22	0.42	0.45	16	21.32	401	0.78
Tajikistan	—	637	0.98	—	100	0.67	3	54.79

Note: Country results are shaded in green, yellow, and red according to whether their performance on any particular matrix is good, mediocre, or poor. dd = demand; gCO₂/kWh = grams of carbon dioxide per kilowatt-hour; GNI = gross national income; MW = megawatt; RE = renewable energy; SAIFI = System Average Interruption Frequency Index; TFEC = total final energy consumption; — = not available.

The Impact of Renewables

1.29 R/kWh

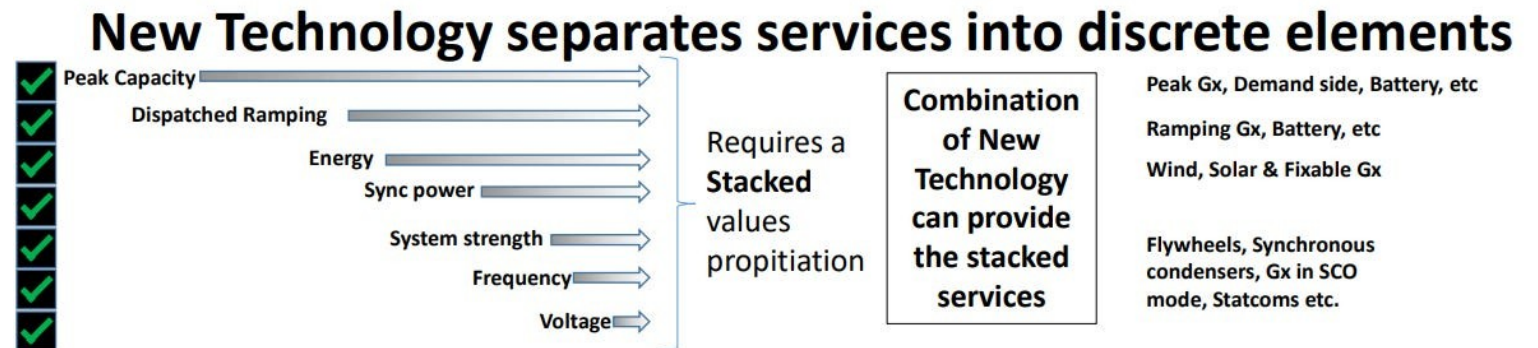
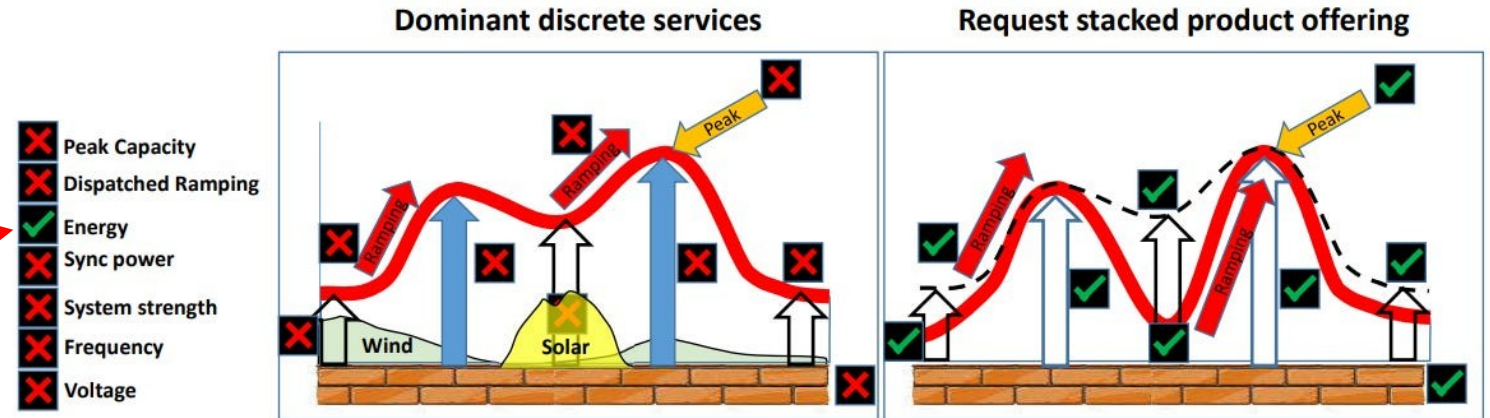


R/kWh
0.26

R/kWh
1.03

Fixed Cost
Variable Cost

New Technology.....Good or Bad?.....No! Just Different



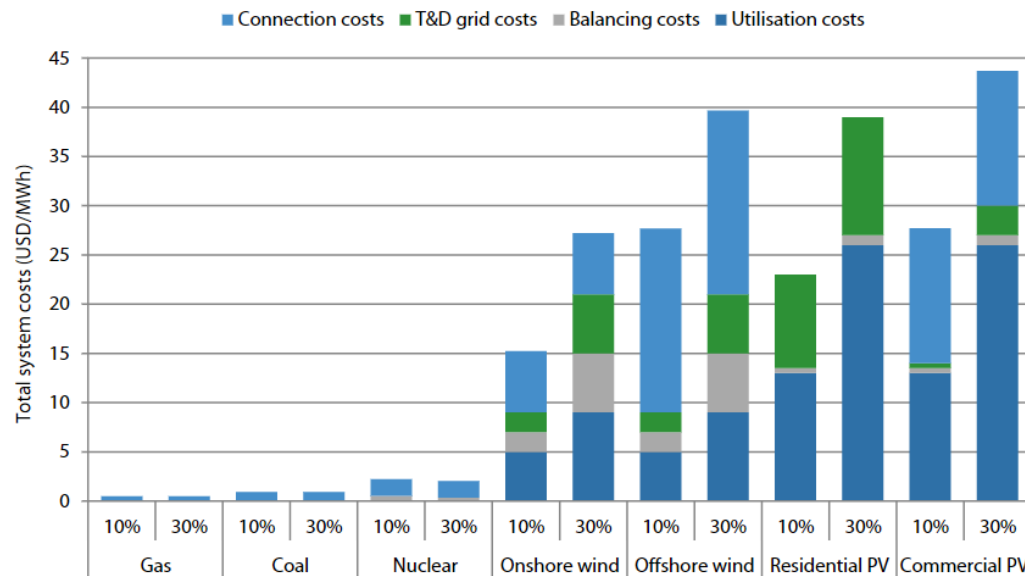
Disruption of the pricing model in kwh,
South Africa should move towards a
service model

Why the full cost of electricity matters (capacity charges)

https://read.oecd-ilibrary.org/nuclear-energy/the-full-costs-of-electricity-provision_9789264303119-en#page20

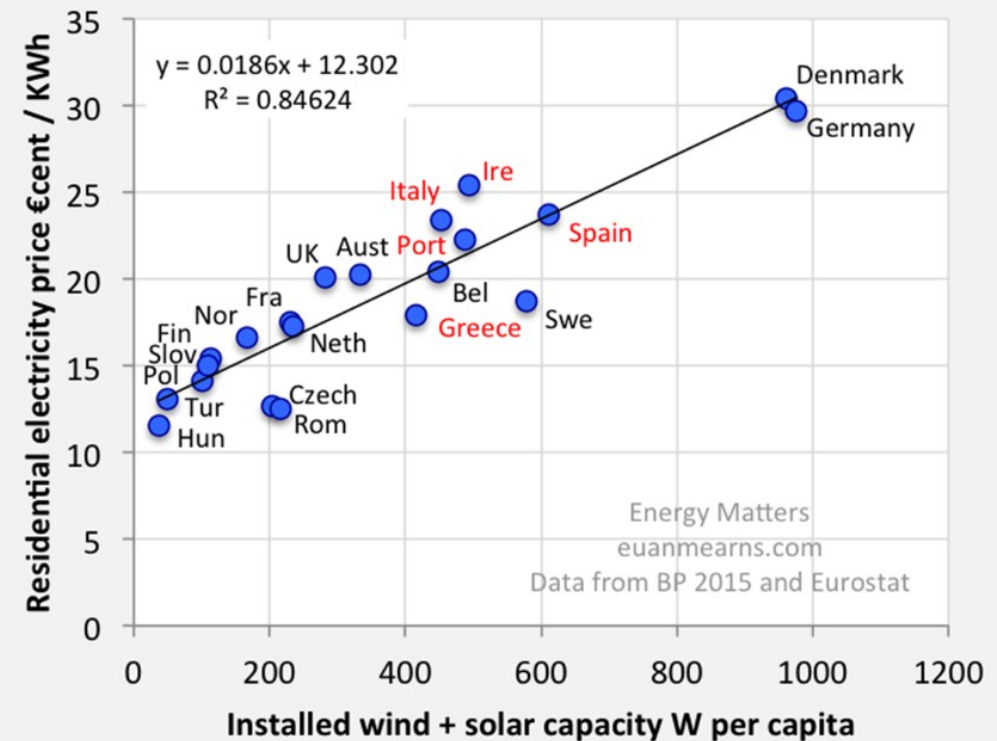
Source: OECD: Full cost of electricity

Figure ES.3: **Grid-level system costs of selected generation technologies for shares of 10% and 30% of VRE generation**



FCOE to be recovered through a capacity charge (price per amps)

Europe Electricity Price v Installed Wind + Solar Capacity



The bill: Clauses that make no sense to me

"(d) the setting **[and]** or approval of **[prices, charges, rates and]** tariffs charged by licensees;"

- "(1A) Tariff determinations must take into account all planned projects reflected in the integrated resource plan and the transmission development plan insofar as these projects shall impact on the costs of the licensee for the period during which the tariff shall apply.

- (1B) In the case of vertically integrated licensees, the Regulator must set or approve separate tariffs for each of the licensed activities listed in the sub-paragraphs of section 4(a)(i).";

//The regulator should MONIOTOR pricing and intervene when deemed necessary and not be the one setting the prices. Eskom is where it is because the regulator set the prices and the prices were not aligned to its cost structure.//

(f) may have regard to the need to ensure security of supply and **diversity of supply and to promote renewable energy.**";

I do not see the value add of adding "diversity of supply and promote renewable energy" as the energy mix is governed by the Integrated Resource Plan.

The bill: Clauses that make no sense to me

"(4) Notwithstanding subsection (2), a licensee may charge a customer a tariff which has not been set or approved by the Regulator where such tariff is charged pursuant to a direct supply agreement or arises as an outcome of a competitive market.

//This clause basically negates the whole price regulation in earlier clauses in the case that there is a direct agreement of sale between the licensee and the consumer//

Summary

- SA Should not expect the reforms to end loadshedding (based on the literature)
 - There are major risks to social economic instability
 - Eskom's performance will not improve with unbundling, bankruptcies will likely hurt us.
 - My proposal is to put the implementation of unbundling aside and first fix our security of supply
- South Africa should have three priorities in electricity (OECD):
- Security of Supply,
 - Cost/Equity
 - Environmental Conditions

SA should focus on fixing the existing infrastructure, coal fleet is repairable, technical solutions do

Over 1/3 of SAs population is unemployed, the **majority are black**

SA government will not resist bailouts if real "structural adjustments" take place. "Not unbundling now" does not lock out the private sector, SA still can sell through IPPs (actually subcontractors) and Power Purchase Agreements (PPAs)

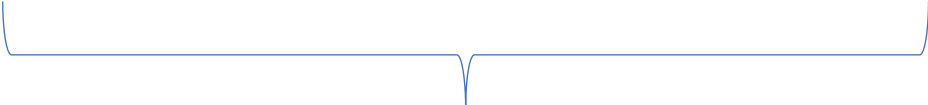
Appoint competent people and lock up those who steal money

1998 white paper on privatisation came into being when SA had a security of supply, unbundling Eskom was more likely to be properly implemented then than today

SA should have a 5GW

Summary [if you go ahead with the act]

- If you go ahead with the act (and ignore these concerns), then please regulate the industry like the telecoms industry.
- Regulator should not be able to set prices, but it can monitor prices.
- I propose that we don't sell using the marginal price (in kwh), but rather as a service (price in amps or capacity)



If you don't Eskom will further go into bankruptcy, and we will end up like California

Regulate energy as we regulate cellphones, fixed charge and variable kwh

//The regulator should MONITOR pricing and intervene when deemed necessary and not be the one setting the prices//

-ICASA is a good example
- competition commission
- a distinction between economic and safety regulation should be made

My proposal for SA - Fix and keep the coal for another 2 decades

hkrugertjie.substack.com/p/eskoms-breakdowns

Hügo's Newsletter

No reason why Eskom can't make reliable comeback - Sir Mick Davis, 2021

JOHANNESBURG (miningweekly.com) – There is no reason why Eskom cannot return to a situation where it can be a credible, reliable supplier of reasonably priced electricity, Sir Mick Davis said on Thursday.

vgbe energy report on the status of the coal stations must become public before this bill is adopted, because it will inform whether Eskom can continue a rule as a vertically integrated utility

The focus should be to fix Eskom plants. It takes less time to fix existing plants than to permit and construct new plants. South Africa has the skills to fix Eskom and operate its stations efficiently, as is done world-wide. The power sector can simultaneously be restructured, for example with IPPs and privatisation.

Eskom should, and its shareholder should commit publicly and in law:

1. Fix 40 GW of the fleet of coal-fired power plants, not apologise for it being a coal fleet. Coal is supplied domestically, must be transported by railway rather than trucks, no foreign currency implication and accretive to employment. Overhauling a new plant should ideally take 8 months, but with lack of routine experience it can take up more than 1 year (as was the case with Koeberg's Life Extension).
2. The Government would bolster Eskom's balance sheet, assume part of the debt and invoices overdue by municipalities to Eskom, which Eskom could in turn use to repay debt.
3. Establish a 20 GW renewable program with 4 GW wind and solar awarded annually for 5 years (established in law). Competitive bidding with complete certainty, provided by the private sector.
4. Establish a 5 GW rooftop solar program with a R1.75/kWh feed-in-tariff without escalation valid for 5 years with a construction window of 24 months. Net

<https://hkrugertjie.substack.com/p/eskoms-breakdowns>

Thank You



« Cooperation between the private sector and government is possible, solutions don't have to lock them out. »